

Jan. 23, 1968

J. R. ME KINEY ET AL

3,365,267

STERILIZER UNIT FOR BARBER TOOLS

Filed Sept. 12, 1963

2 Sheets-Sheet 1

Fig. 1

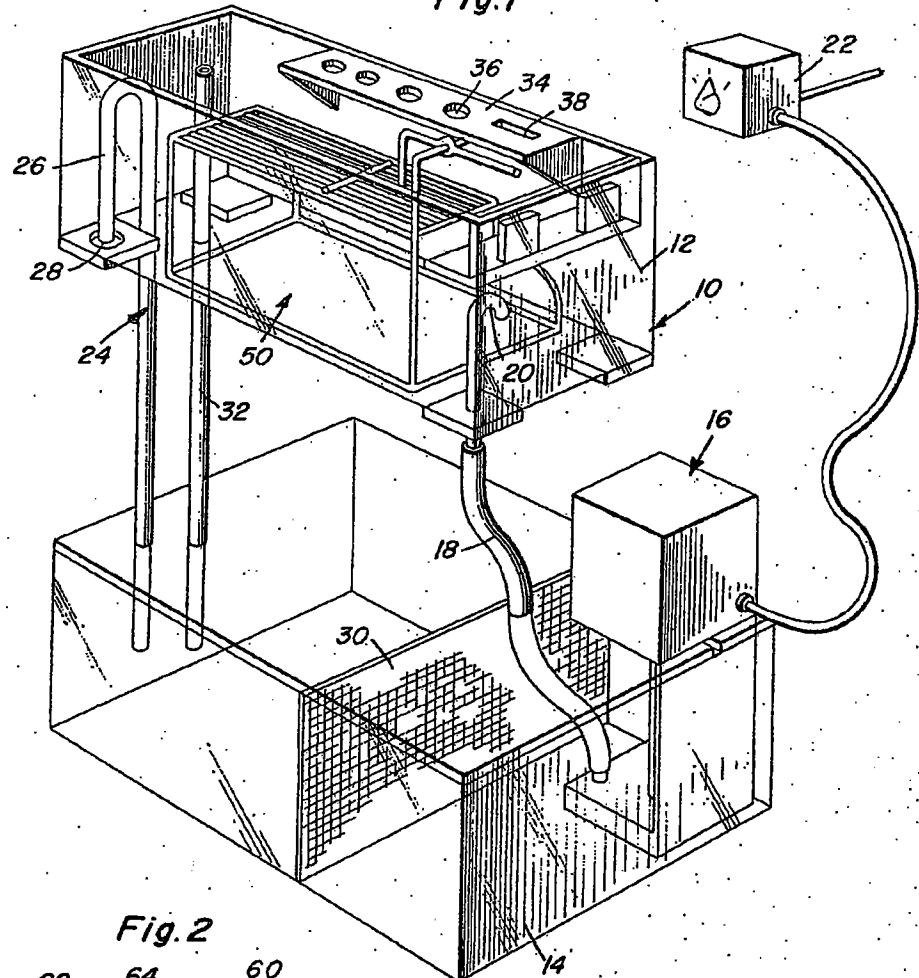
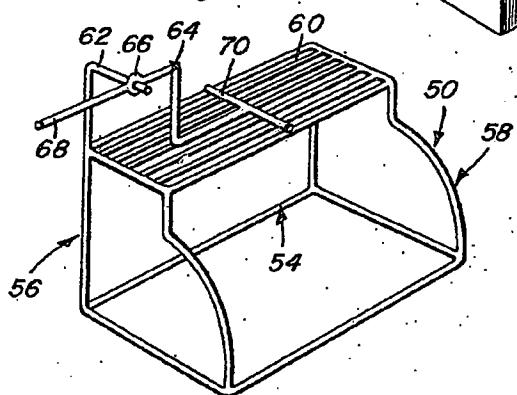


Fig. 2



James R. McKinney
Margaret H. McKinney
INVENTORS

BY *Clarence A. Johnson*
and Harvey B. Johnson
Attorneys

Jan. 23, 1968

J. R. ME KINEY ET AL

3,365,267

STERILIZER UNIT FOR BARBER TOOLS

Filed Sept. 12, 1963

2 Sheets-Sheet 2

Fig. 3

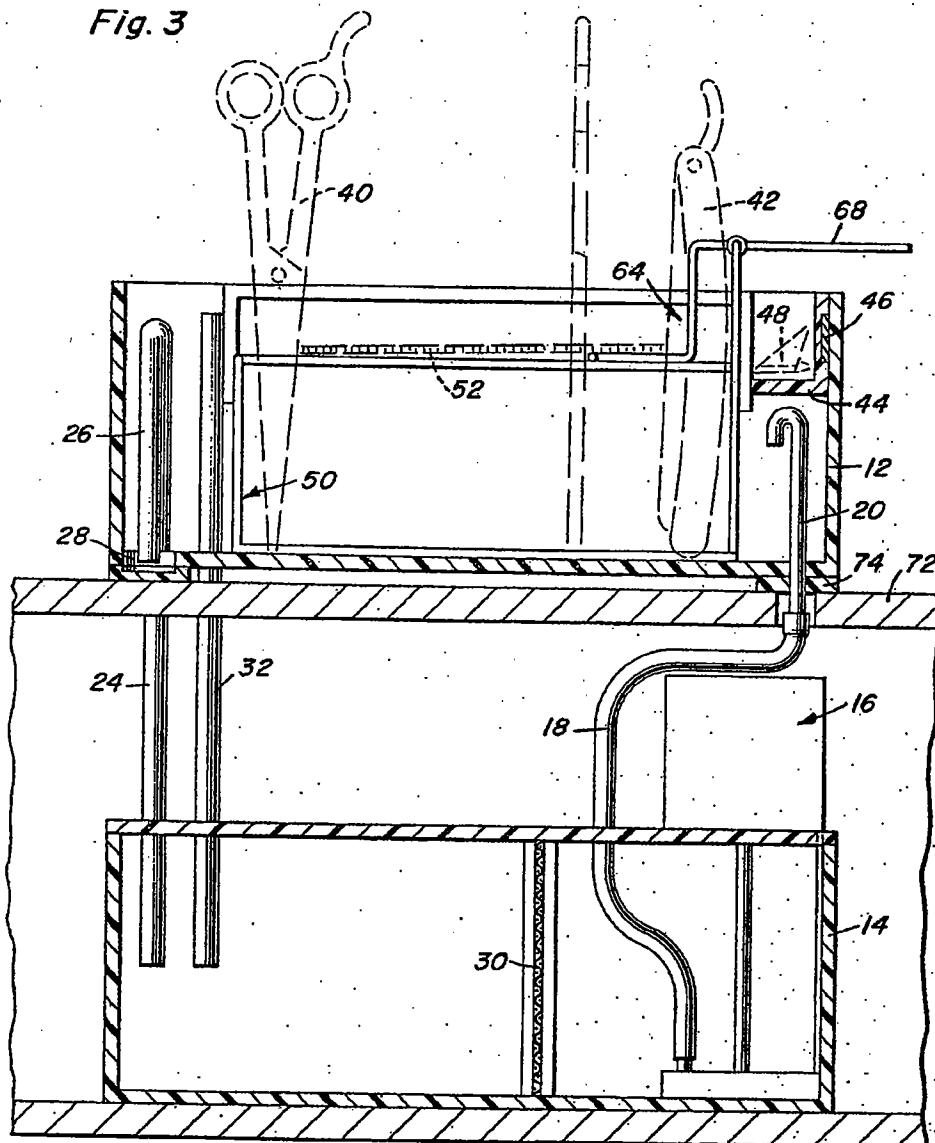
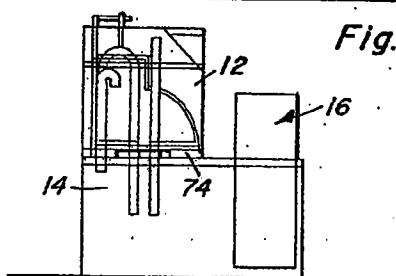


Fig. 4



James R. McKiney
Margaret H. McKiney
INVENTORS

BY *James R. McKiney*
and Harvey B. Jackson
Attorneys

United States Patent Office

3,365,267

Patented Jan. 23, 1968

1

3,365,267

STERILIZER UNIT FOR BARBER TOOLS
 James R. McKinley and Margaret H. McKinley, Omaha,
 Nebr., assignors to Sterilmaster, Incorporated, Omaha,
 Nebr., a corporation of Nebraska
 Filed Sept. 12, 1963, Ser. No. 308,483
 6 Claims. (Cl. 21—37)

ABSTRACT OF THE DISCLOSURE

A sterilizer tank into which instruments to be sterilized may be placed and having sterilizing fluid handling means operatively associated therewith for automatically pumping sterilizing fluid into the tank to a predetermined level for a predetermined time interval in response to actuation of a single control and to then drain said tank of the sterilizing fluid therein after the time interval has been completed.

This invention primarily relates to a sterilizer unit for sterilizing various tools used by a barber in his trade such as a razor, shears and combs and the like.

Under the law of most states, a barber must sterilize all of his tools between their use on each of his customers. Most sterilizers used for this purpose are simply tanks or jars containing sterilizing fluid into which the barber immerses his shears, combs and other tools. This necessitates the removal of the instruments out of the fluid and wiping them dry before each use. This in itself is not only unsanitary but consumes a great amount of time.

In order to overcome the before noted deficiencies in the prior art, it is a primary object of this invention to disclose a sterilizer unit, especially adapted for use with but not limited to barber tools, in which the instruments may be placed, sterilized and dried between successive uses in a minimum amount of time and automatically.

In order to carry out the preceding object, it is a further object of this invention to disclose a sterilizer unit comprising a pair of vertically spaced tanks between which sterilizing fluid is adapted to be circulated by means of a pump. In more particular, the pump is adapted to pump fluid from the lower tank to the upper tank and the device includes a timer operatively connected to the pump for regulating the operating cycle of the pump whereby the amount of sterilizing fluid disposed in the upper tank may be controlled. The sterilizing fluid so disposed in the upper tank may be returned to the lower tank by means of a siphon extending between the two tanks. The operation of the siphon depends upon the amount of fluid disposed in the upper tank which is controlled by the timer means. Once the upper tank has been drained by the siphon, the instruments which are disposed in the upper tank are allowed to drain dry thereby removing the necessity of wiping the instruments dry and presenting the instruments in sterile condition for their next use.

A still further object of this invention resides in the fact that filter means are disposed in the lower tank between the siphon tube and the pump whereby all foreign substances such as loose hair and the like which ordinarily accumulates in and on most sterilizers may be filtered from the sterilizing fluid before it is returned to perform its sterilizing function.

2

Yet another object of this invention resides in the fact that the lower tank and operating mechanism may be concealed from view thereby presenting a pleasing appearance of the sterilizer unit to the barber and his customers.

Still another object of this invention resides in the provision of a plurality of barber instrument support means disposed in the upper tank in the flow path of the sterilizing fluid whereby a plurality of barber's instruments may be held and supported to be sterilized by the sterilizing fluid. Some of said support means include means specifically designed for holding scissors and razors as well as magnetic clippers and still others of said support means comprises a removable rack for holding flat objects such as combs, tweezers and other items. This latter rack further comprises means for lifting instruments out of the sterilizing fluid if necessary.

A still further object of this invention resides in its simplicity in construction, ease of manufacture and efficiency in which it accomplishes its primary purpose.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the sterilizer unit comprising the subject matter of the instant invention.

FIGURE 2 is a perspective view of a removable rack which may be placed in the upper tank portion of the sterilizer unit for supporting flat objects or the like.

FIGURE 3 is a fragmentary cross sectional view taken through the longitudinal center of the sterilizer unit depicted in FIGURE 1.

FIGURE 4 is a side view in elevation of the sterilizer unit showing that the upper tank may be supported by the lower tank if desired.

Referring now to the drawings in detail, the sterilizer unit generally designated by the numeral 10 comprises an upper tank 12 and a lower tank 14. These tanks may be made of any suitable material such as plastic, ceramic, or stainless steel. The sterilizing fluid is adapted to be disposed in the lower tank 14 and pumped to the upper tank 12 wherein it will perform its sterilizing function before returning once again to the lower tank.

Seated on the lower tank 14 is a pump generally designated by the numeral 16. The pump 16 is of a modified sump-type and is adapted to pump the sterilizing fluid through a flexible conduit 18 extending between the tanks 12 and 14 and into a tube 20 seated within the tank 12. The sterilizing fluid emanates from the tube 20 and fills the tank 12 in an amount dependent upon the operating cycle of the pump 16. In order to control the operating cycle of the pump 16, the sterilizer unit 10 includes a timer 22 of a conventional type which automatically causes the pump to cease operating after a predetermined time interval.

Also extending between the tanks 12 and 14 is a siphon tube 24. Once the liquid level in the tank 12 rises above the height of the short tube portion 26 of the siphon tube 24, the sterilizing fluid will be returned through the siphon tube to the lower tank 14. This will occur if the timing cycle of the pump 16 set by the timer 22 allows the sterilizing fluid to accumulate to the aforementioned height in the tank 12. However, the timer 22 can also be

set so that the sterilizing fluid will not accumulate above the short length of pipe 26 wherein the sterilizing fluid can be caused to remain in the tank 12 for an indefinite period. After the pump is once again started, the sterilizing fluid will once again fill the tank 12 above the height of the short length of pipe 26 wherein the fluid will be returned to the tank 14. The numeral 28 indicates a well immediately below the siphon tube 26 wherein fluid may accumulate below the siphon tube short length 26 to begin the siphon action.

When the sterilizing fluid is returned to the tank 14, the fluid before it returns to the pump to be pumped back to the tank 12 must pass through a removable filter element 30 disposed between the side walls of the lower tank. This filter element removes loose hair and other foreign substances which are usually associated with barber's sterilizing equipment and thereby allows the presentation of clean sterilizing fluid to the barber's instruments which are adapted to be disposed in the upper tank 12. An overflow drain pipe 32 also extends between the upper and lower tanks to insure removal of the fluid from the tank 12 in case the siphon tube is rendered inoperative for any reason.

A plurality of instrument support means are disposed in the tank 12 in the flow path of the sterilizing fluid for holding and supporting instruments to be sterilized by said fluid. One of said support means comprises a shelf 34 having a plurality of apertures 36 cut therein as well as an elongated slot 38. The apertures 36 are adapted to receive and hold scissors such as shown at 40 while the elongated slot 38 is adapted to receive and hold razors such as shown at 42.

A second supporting element also comprises a shelf 44 which is L-shaped and secured to one of the end walls of the upper tank 12. Embedded within the vertical leg of the shelf 44 are a plurality of magnets such as 46. This shelf is specifically adapted to support clipper blades such as 48 which will be retained and held on the shelf 44 by means of the magnets 46.

A third instrument support means comprises a removable rack such as generally indicated by numeral 50 which is also adapted to be seated within the upper tank 12 and is specifically adapted to support substantially flat articles such as combs 52, tweezers or the like. As specifically shown in FIGURE 2, the rack 50 includes a rod frame including a rectangular base portion 54 and a pair of upstanding end frames 56 and 58. The top of the rack includes a planar supporting surface comprising a plurality of spaced parallel rods 60. The tweezers and combs may be disposed on said surface. The rack further includes an L-shaped extension 62 which forms a hanger and pivot axis for a lever 64. The lever 64 includes an eye 66 through which a horizontal portion of the L-shaped hanger 62 may be disposed. As viewed in FIGURE 2, the portion of the lever 64 to the left of the eye 66 comprises an actuating handle 68 for moving a T-shaped head 70 at the opposite end of the lever 64 up and down. Some of said instruments 52 may be placed upon the T-shaped head whereby upon actuation of the handle 68, the instruments may be raised up and away from the planar supporting surface of the rack 50. In this manner, the operator of the sterilizer unit may retrieve combs or the like even though the sterilizing fluid still remains in the tank 12.

With specific reference now to FIGURE 3, it will be observed that the lower tank 14 of the sterilizer 10 may be hidden from view of the barber and his customers by enclosing it behind a suitable partitional wall such as 72. The tank 12 may be formed with a plurality of legs such as 74 whereby it may be seated upon the partition 72. As an alternative, if desired, the upper tank 12 may be seated directly upon the lower tank 14 as indicated in FIGURE 4.

The operation of the sterilizer unit should now be readily apparent. The barber's tools, that is the razor, shears, combs or the like, are placed in their individual racks and supports disposed in the upper tank 12 of the sterilizer unit 10. By turning on the timer 22, the sterilizing fluid in the tank 14 will be pumped to and over the tools in the tank 12. This approximately takes one minute. If the timer is set to shut off before the fluid reaches the top of the short length of tubing 26 of the siphon tube 24, the fluid will remain in the upper tank 12.

10 However, if the pump is allowed to substantially fill the container 12, the siphon tube 24 automatically drains the container 12, leaving the tools to drip dry for immediate use. Before the next pumping cycle, all foreign matter is filtered from the sterilizing fluid by means of the filter element 30 disposed in the lower tank 14. The whole operation takes approximately 3 minutes. Further, the whole bottom tank and its associated apparatus may be concealed behind a suitable partitional wall such as 72.

20 The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, 25 and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A sterilizing unit comprising upper and lower tanks, 30 fluid passage means communicating the lower tank with the upper tank, pump means operatively associated with said fluid passage means for pumping sterilizing fluid from said lower tank into said upper tank through said fluid passage means, siphon means operatively associated with 35 said tanks for automatically siphoning fluid from said upper tank into said lower tank in response to an increase in the fluid level in said upper tank to a predetermined level below the top of said upper tank, overflow passage means communicating said upper and lower tanks and 40 operative to pass all fluid pumped into said tank above a second predetermined level spaced above the first-mentioned predetermined level downwardly into said lower tank, and adjustable timer controlled drive means connected to said pump operative to initiate and subsequently automatically terminate operation of said drive means 45 after a selected period of operation of said drive means.

2. The unit of claim 1 wherein said upper tank includes 50 means for supporting instruments within said upper tank at an elevation above the bottom of the upper tank and below said predetermined level.

3. The unit of claim 1 including instrument support 55 means comprising a shelf secured to a wall of said upper tank, said shelf including a plurality of openings for receiving instruments to be sterilized.

4. The unit of claim 1 including instrument support 60 means comprising a removable rack seated within said upper tank, said rack including an elongated substantially horizontal planar instrument supporting surface below said predetermined level, and instrument removal 65 means for lifting instruments from said planar supporting surface above said predetermined level.

5. The unit of claim 1 including instrument support 70 means comprising a shelf secured to a wall of said upper tank, said shelf including at least one magnet for holding and retaining a magnetizable instrument to be sterilized.

6. The combination of claim 1 including instrument support means comprising a removable rack seated within said upper tank, said rack including an elongated substantially horizontal planar instrument supporting surface below said predetermined level, and instrument removal 75 means for lifting instruments from said planar supporting surface above said predetermined level, said instrument removal means comprising a cross head disposed below said predetermined level and extending trans-

3,365,267

5

versely of said supporting surface and carried by the lower end of an upstanding level whose upper end portion is pivotally supported from said rack for rotation about a horizontal axis disposed above said predetermined level and extending transversely of said supporting surface, said crosshead being adapted to have corresponding end portions of elongated instruments disposed on and extending longitudinally of said supporting surface rested thereon for elevation of said corresponding end portions above said predetermined level upon upward swinging movement of said crosshead.

10

6

References Cited

UNITED STATES PATENTS

1,170,387	1/1916	Andrews.
1,842,204	1/1932	Roberts _____ 21—105 X
2,681,658	6/1954	Meeker et al. _____ 134—111
2,729,337	1/1956	Alferman _____ 210—169 X
3,092,443	6/1963	Dietz _____ 21—105 X

MORRIS O. WOLK, Primary Examiner.

R. M. REESE, Assistant Examiner.